REMARKS

Claims 1-19 are pending in the present application. Claims 1-3, 5-8, 11 and 14-17 are rejected, and claims 4, 9-10, 12-13 and 18-19 are objected to. Claim 1 is amended hereby.

Applicants acknowledge and appreciate the indication by the Examiner that the formal drawings filed 29 November 2004 are acceptable.

Claims 1 and 14-17 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,382,825 (Neilson). Responsive thereto, Applicants respectfully traverse.

The Examiner has maintained the rejection of claim 1 as being anticipated by Neilson. The Examiner asserts that Applicants prior statement that the annular rings of Nielson are biased to the same or equal voltages (whereas the field plates of the present invention are biased to different voltages) is not supported by the passage cited by Applicants in our response to the prior Office Action. Applicants hereinafter provide more comprehensive and unequivocal support for the assertion that the annular rings of Nielson are biased to the same or equal voltages.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2*

USPQ2d 1051, 1053 (Fed. Cir. 1987). Applicants submit that Neilson does not disclose biasing the rings or field plates to different, unequal, or non-uniform voltages, and therefore does not anticipate, claim 1.

Neilson discloses resistively dividing a potential difference to generate a plurality of bias voltages. However, no disclosure whatsoever is found in Nielson to support applying non-uniform bias voltages to the rings. In the section which the Examiner cites in the current Office Action, Neilson teaches that the rings are connected by resistors or diodes to force voltage to be distributed uniformly from ring-to-ring across the edge passivation area. (*column 2, lines 50-55, Emphasis Added*). Thus, Nielson teaches that the voltage must be distributed or divided uniformly between the rings.

Applicants submit that a uniform distribution of a voltage conveys to one skilled in the art that the source voltage is divided equally or uniformly to derive uniform bias voltages, i.e., bias voltages that differ from each other by a uniform factor. The word "uniform" is defined as "not varying or variable" and as being "of the same form with others: conforming to one rule or mode". (Merriam-Webster On-line dictionary, http://www.m-w.com/cgi-bin/dictionary? book= Dictionary&va=uniformly). For example, a uniform division of a source voltage between rings or field plates in a four ring or plate device yields four rings or plates biased with a relative difference in their bias voltages of approximately twenty-five percent of the source voltage. Such a biasing scheme does not distribute the electric field profile as effectively as the present invention. (*see Fig. 3B and page 8, lines 13-of the present Specification*).

In contrast, claim 1 as amended recites in part "a plurality of predetermined non-uniform bias voltages derived by said voltage divider network" and "a field plate termination including a plurality of field plates, . . . each of said plurality of field plates electrically connected to a corresponding one of said plurality of predetermined non-uniform bias voltages". (*Emphasis Added*). Applicants submit that Nielson does not disclose such a limitation.

As discussed above, Neilson requires that the voltage be distributed uniformly from ring-to-ring. "The rings are connected by resistors or diodes to force voltage to be distributed uniformly from ring-to-ring . . . ." (*column 2, lines 52-55, Emphasis Added*). Thus, Neilson teaches that the rings are uniformly biased with bias voltages that vary uniformly, e.g, by the same percentage or proportion.

In contrast, the present invention biases the rings or field plates with non-uniform bias voltages. More specifically, the voltage to which the field plates are biased increases non-uniformly with the proximity of the particular plate to the die street of the device. Preferably, in a three field plate device the field plate most proximate the die street is biased with from 50 to 60 percent of a source voltage, the middle field plate is biased with from 20 to 30 percent of the source voltage, and the field plate most distant from the die street is biased with from 15 to 20 percent of the source voltage. (*see page 7, lines 9-23 of the present Specification*).

The bias voltages applied to the field plates are thus unequal and non-uniform, and are determined at least in part by the position of the field plate relative to the die street. By applying the unequal and non-uniform bias voltages, the electric field is drawn toward the die street to alleviate the crowding seen in the prior art structures, such as that shown in Fig. 3B of the present Specification.

Since biasing the field plates with non-uniform relative percentages of a given or source voltage is not the same as or equivalent to biasing the field plates with a uniform relative percentage of a given or source voltage, and since Nielson does not disclose biasing the rings or field plates with non-uniformly relative varying voltages, Nielson does not anticipate amended claim 1. Accordingly, Applicants request withdrawal of the rejection and submit that claims 1 and claims 2-13 depending therefrom are now in condition for allowance, and respectfully request same.

Claim 14 was also rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,382,825 (Neilson). Claim 14 as amended recites in part "applying a respective one of said plurality of bias voltages to each of said field plates such that the bias voltage applied to a particular field plate non-uniformly increases with the proximity of that particular field plate to said die street". (*Emphasis Added*). Thus, claim 14 also requires, generally similar to claim 1, that the field plates be biased with non-uniform bias voltages. Claim 14 also requires that the bias voltage applied to a particular field plate increase with proximity of that field plate to the die street.

In contrast, as discussed above, the rings of Neilson are each uniformly biased. Thus, Neilson fails to disclose applying a respective one of the bias voltages to each of the field plates such that the bias voltage applied to a particular field plate non-uniformly increases with the proximity of that particular field plate to the die street, as recited in part by amended claim 14.

Since Neilson does not disclose each and every element as set forth in claim 14, Applicants submit that the claim is not anticipated thereby. Accordingly, Applicants respectfully request withdrawal of the rejection and allowance of claim 14 and claims 15-19 depending therefrom.

The Examiner has also maintained and made final the rejection of claims 1-3, 5-8 and 11 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,525,390 (Tada, et al.).

Tada, however, much like Nielson, equally and uniformly divides a voltage into a plurality of smaller but equal and uniform bias voltages which are then applied to the field plates. Tada teaches that, for a desired breakdown voltage of 700 V, the voltage applied across each diode is 2.5 V. (*column 14, lines 41-45, Emphasis Added*). Thus, Tada teaches that the source voltage is uniformly divided into a plurality of smaller and equal bias voltages which are then applied to the field plates. The device of Tada, et al., does not generate a plurality of non-uniform bias voltages, nor are the field plates connected to different and non-uniform bias voltages. Thus, Tada, et al., fails to disclose a plurality of predetermined non-uniform bias voltages derived by a voltage divider network and a field plate termination including a plurality of field plates, each of which are electrically connected to a corresponding one of the plurality of predetermined non-uniform bias voltages, as recited in part by amended claim 1.

Since Tada, et al., does not disclose each and every element as set forth in amended claim 1, Applicants submit that the claim is not anticipated thereby. Accordingly, Applicants respectfully request withdrawal of the rejection and allowance of claim 1 and claims 2-13 depending therefrom.

Applicants acknowledge and appreciate the Examiner's indication that claims 4, 9-10, 12-13 and 18-19 would be allowable if rewritten in independent form to include all the limitations of their respective base claim(s) and any intervening claims, for which courtesy the Examiner is thanked. Applicants respectfully request reconsideration of this Amendment and the Remarks herein prior to rewriting claims 4, 9-10, 12-13 and 18-19 in allowable form.

For all the foregoing reasons, Applicants submit that no combination of the cited references teaches, discloses or suggests the subject matter of the amended claims. The pending claims are therefore in condition for allowance. Accordingly, Applicants respectfully request withdrawal of all objections and rejections, and allowance of the claims.

In the event Applicants have overlooked the need for an extension of time, additional extension of time, payment of a fee, or additional payment of a fee, Applicants hereby conditionally petition therefor.

The Examiner is invited to telephone the undersigned in regard to this Amendment and the above identified application.

Respectfully submitted,

4/8/2005
Date

Thomas R. FitzGerald
Thomas R. FitzGerald
Reg. No. 26,730

E-mail: tom.fitzgerald@fitzpatent.com

Thomas R. FitzGerald, Esq.
Law Office of Thomas R. FitzGerald
16 E. Main Street, Suite 210
Rochester, New York 14614
Telephone: (585) 454-2250
Fax: (585) 454-6364